

CLAIMS

1. A low temperature sintering ceramic composition containing Mg, Si, Bi and Li as constituent elements, wherein the
5 composition comprises

MgO and SiO₂ in sum total in the range of from 64.0 to 99.2% by mass;

Bi₂O₃ in the range of from 0.4 to 33.0% by mass;

Li₂O in the range of from 0.4 to 3.0% by mass; and

10 MgO and SiO₂ are contained in the molar ratio of from 2: 1 to 2: 3.5, at least part thereof being contained as a complex oxide of Mg and Si.

2. The low temperature sintering ceramic composition
15 according to claim 1, wherein the composition comprises

MgO and SiO₂ in sum total in the range of from 75.0 to 98.0% by mass;

Bi₂O₃ in the range of from 1.5 to 24.5% by mass;

Li₂O in the range of from 0.5 to 3.0% by mass.

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3. The low temperature sintering ceramic composition according to claim 1 or 2, wherein the complex oxide is a forsterite system crystal phase and/or enstatite system crystal phase; and

25 at least part of Bi₂O₃ and Li₂O is contained as a Bi₂O₃-SiO₂ system crystal phase and a Li₂O-SiO₂ system crystal phase.

4. The low temperature sintering ceramic composition according claim 3, wherein the forsterite system crystal phase
30 and/or enststite system crystal phase are contained by 60% or more

of a total volume of the ceramic.

5. The low temperature sintering ceramic composition according to any one of claims 1 to 4, wherein a Qf value is 10,000
5 or more.

6. An electronic component comprising a wiring pattern on the low temperature sintering ceramic composition according to any one of claims 1 to 5.

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7. The electronic component according to claim 6, wherein the wiring is formed by sintering a conductive paste containing at least one metal selected from Ag, Au and Cu.

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8. A method of fabricating a low temperature sintering ceramic composition comprising:

molding a raw material powder containing one or both of a mixture of MgO and SiO₂ that contains MgO and SiO₂ at a molar ratio in the range of from 2: 1 to 2: 3.5 and a complex oxide thereof
20 in the range of from 64.0 to 99.2% by mass, Bi₂O₃ in the range of from 0.4 to 33.0% by mass and Li₂O in the range of from 0.4 to 3.0% by mass into a predetermined shape followed by sintering at a temperature in the range of from 850 to 1000 °C.

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9. The method according to claim 8, wherein the raw material powders are fine powders having a particle size of 2.0 µm or less.